June Mixed Waste Subgroup Highlights

The Hanford Mixed Waste (MW) Subgroup met on June 12, 1997. Due to Joe Waring's absence, Norm Olson chaired the meeting. Over the next few months presentations about each of the ongoing EM-50 funded demonstrations at Hanford will be given to the subgroup. The first one on the PNNL DC arc furnace testing process was presented at this meeting by Charles Freeman.

PNNL has been developing furnaces since 1992. The current DC arc furnace is being designed to treat mixed waste at INEEL, SRS, PANTEX, and other DOE sites. Some of the incentives for using the DC arc furnace include destroying the organics in the waste, reducing the volume of the waste, destroying or immobilizing the hazardous waste constituents so as to remove the waste from the mixed waste category, and to reduce the up-front characterization of the waste. All of these incentives reduce the disposal costs of treating or storing the waste. Charles explained the benefits of the DC arc furnace as compared to an incinerator, a joule-heated furnace, and a plasma-heated furnace. At the present time PNNL is running tests on a radioactive, engineering-scale system of the DC arc furnace. The third and fourth tests of this system are to be done this FY with a report due out the second quarter of FY98. This will end the demonstration phase of the project.

Charles explained how the system was set up and how it operated using view graphs of the system as well as photos of the arc furnace. He explained the objective of the current demonstration, which included establishing the processing and operational limits of the furnace, measuring the durability of key components, and determining the fate of Pu and other hazardous metals during processing. At the present time they are looking at an off-gas system to help with a problem of organics limiting the operation of the furnace. Charles presented some results of running the furnace in various modes with differing levels of MW. At the present time, depending on the waste type, the furnace can treat 50 to 100 pounds per hour. Due to the privatization effort at Hanford there is little Hanford MW for the DC arc furnace to treat. Most of the potential waste is at INEEL and SRS. The 324 Building, where the work is now being performed, is scheduled to be closed next year after this program is finished, but the equipment is movable. ATG is talking to them about treating their special case wastes using the DC arc furnace.

Greg Berlin stated that the FDH Technology Management Team is starting to produce fact sheets on technology deployments taking place at Hanford. He will present the information and distribute these fact sheets for review at the subgroup meetings. The first two fact sheets were distributed at this meeting and presented by Greg. The first deployment presented was for a mobile x-ray system for examining LLW burial boxes. The problem is the need to inspect a certain number of containers before burial to verify that they contain LLW only and not MW or higher radiation material. This deployment is the only mobile box inspection system that does not open the box. It uses a conventional x-ray system to look for unusual, prohibitive material in the boxes. It costs $1300 per box to use this mobile system versus $5000 for a manual inspection. This cost savings is in addition to the ALARA improvements.

The second technology deployment that Greg presented was for an aerosol fogging system for fixing radioactive contamination. This is a temporary fixing of the contamination and has been used in the Tank Farm pit/facilities. This new technology is much cheaper than the older method of controlling the contamination and results in far less waste. In addition, this technology reduces worker exposure and speeds up the schedule. Greg wants all comments on the technology deployment fact sheets to be sent to him.

Norm Olson distributed copies of the schedule for the technology needs process for FY98. The Technology Steering Groups (TSGs) are already meeting to identify needs from the projects and to review last year's needs from the STCG. Norm proposed that the subgroup review the needs as the TSGs finish them, rather than wait until September or August to do it all in one meeting. More information on this year's process will be presented at the next subgroup meeting.

The MWFA held a workshop on materials handling issues in support of radioactive waste treatment at INEEL on June 11. Walt Josephson attended and will report on the meeting at the next subgroup meeting. The MWFA also held a conference call on June 9 on macroencapsulation issues across the complex. Walt Josephson was part of this conference call and will report on the call at the next MW Subgroup meeting. Moses Jarayssi requested an update on Hanford's macroencapsulation effort at the next meeting, also. Moses wants to know why it is taking so long to get going on this work. The barrier is not procurement, but the technical personnel seem to be having trouble putting the requirements together quickly or putting an open bid together. Moses wants to know where the hold-up is. Greg Berlin will try to find out what is going on and report back to the subgroup.

There has still been no MWFA response since their visit two months ago. Mike Connolly of INEEL should be contacted to determine what is going on in the MWFA. If we need to send a letter requesting the response from the MWFA then it should come from the STCG Management Council, not only the subgroup, as it would have more weight.

The next MW Subgroup meeting is scheduled for July 10 in the EESB Stampede Room at 1:00 p.m.